

Claims

1. A method of lining a storage tank comprising the steps of: -
  - 5 providing a keying means on the inner surface of the tank;  
  
applying a corrosion barrier coating to the keying means;  
  
applying an interstitial grid to the tank;  
10 laying up a pliable glass reinforced plastics material onto the grid;  
and  
  
exposing the glass reinforced plastics material to ultra violet rays to  
15 cure the material and form a hardened inner liner shell for the tank.
2. A method as claimed in claim 1 wherein the interstitial grid is provided by pre-formed sheets of flexible material.
- 20 3. A method as claimed in claim 1 wherein the grid is adhesively bonded to the corrosion barrier coating.
4. A method as claimed in claim 1 wherein the grid has a facing material applied to receive the glass reinforced plastics material.  
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5. A method as claimed in claim 4 wherein the facing is a polyester mat bonded to one side of the grid.
6. A method as claimed in claim 1 wherein at least portion of the grid is of a  
30 plastics material.

7. A method as claimed in claim 1 wherein at least portion of the grid is of a composite material.
- 5 8. A method as claimed in claim 1 wherein at least portion of the grid is of a mesh material.
9. A method as claimed in claim 8 wherein the mesh is a metal mesh.
- 10 10. A method as claimed in claim 9 wherein the mesh is an aluminium mesh.
11. A method as claimed in claim 6 wherein the grid is of high density polyethylene material.
12. A method as claimed in claim 1 wherein, for lining, the tank is divided into a number of zones, which are separately lined.
- 15 13. A method as claimed in claim 12 wherein the final zone to be lined is adjacent a manway into the tank.
- 20 14. A method as claimed in claim 2 wherein the sheets of pliable glass reinforced plastics material applied to the grid in section, the marginal edges of the sections being butt jointed.
- 25 15. A method as claimed in claim 14 wherein the joints between adjacent sheets are covered with a GRP tape.
16. A method as claimed in claim 1 including the step of: -
- applying a coating to the hardened GRP liner.

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17. A method as claimed in claim 1 wherein the keying means is provided by grit blasting the inner surface of the tank.
18. A method as claimed in claim 1 including the step of: -
- 5                   cleaning the inner surface of the tank prior to providing the keying means.
19. A method as claimed in claim 18 wherein the inner surface is cleaned by water jet cleaning.
- 10                   20. A method as claimed in claim 1 wherein the corrosion barrier is a glassflake epoxy resin.
- 15                   21. A method as claimed in claim 20 wherein the corrosion barrier layer is applied to a dry film thickness of greater than 1000 microns.
22. A method as claimed in claim 1 including the steps, prior to application of a corrosion layer of: -
- 20                   inspecting the internal wall of the tank; and
- repairing any imperfections in the tank wall.
23. A method as claimed in claim 1 wherein the GRP is exposed to UV by directing UV lamps at the GRP layer.
24. A method as claimed in claim 1 wherein the GRP material is covered with an outer protective film which is removed to expose the GRP material to UV.
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25. A method as claimed in claim 1 wherein the GRP coating is a glassflake epoxy resin.
- 5 26. A method as claimed in claim 1 wherein the tank is an underground liquid storage tank.
27. A tank whenever lined by a method as claimed in claim 1.
- 10 28. A tank as claimed in claim 27 having a tank wall, keying means on the inner surface of the tank wall, a corrosion barrier coating applied to the keying means, an interstitial grid applied to the tank, UV cured glass fibre reinforced material laid onto the grid forming a hardened inner liner shell for the tank.
- 15 29. A tank as claimed in claim 27 including a leak monitoring transducer in the interstitial space defined by the grid.
- 20 30. A tank as claimed in claim 27 including a vapour monitoring means in the interstitial space defined by the grid.
31. A tank as claimed in claim 30 wherein the vapour monitoring means includes a vapour sampling tube.
- 25 32. A tank as claimed in claim 29 including an alarm means associated with the monitoring means.
- 30 33. A tank as claimed in claim 32 wherein the alarm is mounted remote from the tank.